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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/550,596

04/17/2000

Mauro Bettati

10138-0002-2

1077

7590

08/12/2004

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EXAMINER

RODRIGUEZ, ARMANDO

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 08/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/550,596

Applicant(s)

BETTIATI ET AL.

Examiner

ARMANDO RODRIGUEZ

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 28, 2004 has been entered.

Response to Amendment

Claims 24-39 are pending.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 24-39 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In page 5 line 4 of the amended specification applicant describes the threshold condition as being satisfied when the gain equals the losses over a wide range of temperatures but does not describe the laser operating

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below threshold as claimed, furthermore the claim does not define, what is considered to be the threshold; could it be a current threshold as commonly known in the art.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

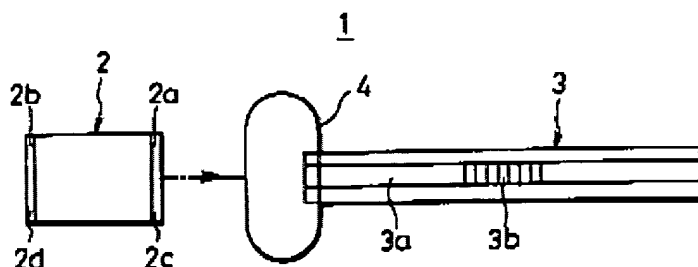
Claims 24-27,33-35,38 and 39 are rejected under 35 U.S.C. 102(e) as being anticipated by Mugino et al (PN 6,343,088).

Regarding claim 24,

Mugino et al illustrates in figure 12 a semiconductor laser module having a semiconductor laser (2) with a reflecting surface (2b), an emitting surface (2a) and an optical fiber (3) including a fiber grating (3b), as described in column 9 lines 20-35 and column 10 lines 50-55. In column 3 lines 58-65 and column 10 lines 43-49, Mugino et al describes the semiconductor laser having central wavelength and the fiber grating

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having a central wavelength, where the difference of the wavelengths is + or – 20nm or less, which clearly encompass the claimed difference in wavelength of 10nm. In column 11 lines 18-37, discloses the operating the laser at different temperatures including 25°C, which is considered ambient temperature.

FIG. 12

Regarding claim 25,

In column 3 lines 58-65, Mugino et al describes the semiconductor laser having central wavelength and the fiber grating having a central wavelength, where the difference of the wavelengths is + or – 20nm or less, which clearly encompass the claimed difference in wavelength of 10nm.

Regarding claim 26,27,39,

In column 3 lines 58-65, Mugino et al describes the semiconductor laser having central wavelength and the fiber grating having a central wavelength, where the difference of the wavelengths is + or – 20nm or less, which clearly encompass the claimed difference in wavelength of 10nm. In column 11 lines 18-37, discloses the operating the laser at different temperatures including 25°C, which is considered ambient temperature.

Regarding claim 33,

Figure 12 does illustrate an optical fiber (3).

Regarding claims 34,35,

Column 3 lines 58-65, describes the semiconductor laser as having either a bulk structure or quantum well structure.

Regarding claim 38,

Figure 12 does illustrate an optical fiber (3) with a Bragg grating (3b).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 28,29 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mugino et al (PN 6,343,088).

Regarding claims 28,30-32,

Mugino et al discloses in column 9 lines 29-35, a reflectance of 1% on the emitting surface (2a) and in column 10 lines 50-58, discloses the fiber grating having a reflectance at the central wavelength of 4%.

Mugino et al does not explicitly disclose the claimed reflection coefficient of 0.1% for the output face or 5% and 1% reflection coefficient for the grating.

However, in column 7 lines 8-17, describes an equation where the reflectance of the emitting surface (R_1) and the reflectance of the grating (R_{GL}) must satisfy:

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($R_{GL} - R_1 \geq -2\%$).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to apply the requirements of reflectance between the emitting surface and the grating based on the equation of Mugino et al because it would provide a relationship between the emitting and the grating as in claims 28,30-32 and would also provide stable laser emission under changes of temperature, as described in column 2 lines 14-19.

Regarding claim 29,

In column 3 lines 58-65, Mugino et al does describes the semiconductor laser having central wavelength and the fiber grating having a central wavelength, where the difference of the wavelengths is + or – 20nm or less, which encompass the claimed difference in wavelength of 10nm. In column 11 lines 18-37, discloses the operating the laser at different temperatures including 25°C, which is considered ambient temperature.

Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mugino et al (PN 6,343,088) in view of Ventrudo et al (PN6,233,259).

Regarding claim 36,

Mugino et al is silent as to the InGaAs in semiconducting medium.

However, the use of InGaAs in semiconductor lasers is well known in the art as described by Ventrudo et al in column 3 lines 50-60.

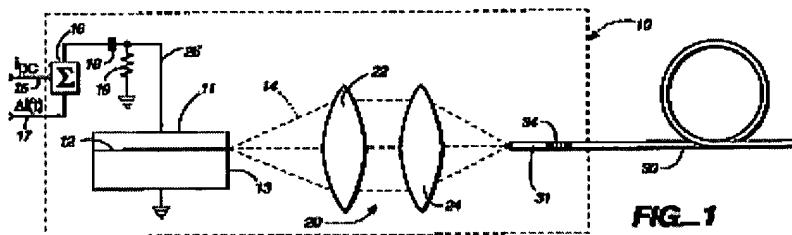
Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mugino et al (PN 6,343,088) in view of Ventrudo (PN 6,240,119).

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Regarding claim 37,

Mugino et al does not disclose the use of a collimating lens and a focusing lens.

However, the use of optical elements for coupling laser radiation is well known in the art, as shown by Ventrudo. Figure 1 illustrates a pigtailed laser diode having a collimating lens (22) and a focusing lens (24) for coupling the laser diode radiation to the optical fiber.



Conclusion

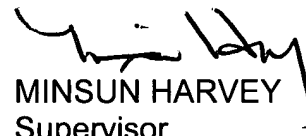
Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARMANDO RODRIGUEZ whose telephone number is 571-272-1952. The examiner can normally be reached on 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MINSUN HARVEY can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


ARMANDO RODRIGUEZ
Examiner
Art Unit 2828


MINSUN HARVEY
Supervisor
Art Unit 2828

AR/MH